

# SEQUENCE LISTING

<110> Sera, Takashi

5 <120> Zinc Finger Domain Recognition Code and Uses Thereof

<130> 109846-130

<150> US 60/220,060

10

<151> 2000-07-21

<160> 69

15

<170> PatentIn version 3.0

<210> 1

<211> 28

<212> PRT

20

<213> Artificial Sequence

<220>

<223> Zinc finger domain.

25

<220>

<221> VARIANT

<222> (1)..(28)

<223> Amino acids 1-3, 8-19 and 25-28 are Xaa wherein Xaa = any amino acid.

30

<220>

<221> VARIANT

<222> (5)..(6)

<223> Amino acid 5 is Xaa wherein Xaa = any amino acid, amino acids 5 and 6 together represent from 2 to 4 amino acids in length.

35

<220>

<221> VARIANT

<222> (21)..(23)

09911661660

See a1

<223> Amino acid 21 is Xaa wherein Xaa = any amino acid, amino acids 21-23 together represent from 3 to 5 amino acids in length.

<400>> 1

5

Xaa Xaa Xaa Cys Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
1 5 10 15

Xaa Xaa Xaa His Xaa Xaa Xaa His Xaa Xaa Xaa Xaa  
10 20 25

<210> 2

<211> 28

15

<212> PRT

<213> Artificial Sequence

<220>

<223> Zinc finger domain.

20

<220>

<221> VARIANT

<222> (1)..(28)

25

<223> Amino acids 1-3, 8-12, 14, 17-18 and 25-28 are Xaa wherein Xaa = any amino acid.

<220>

<221> VARIANT

30

<222> (5)..(6)

<223> Amino acid 5 is Xaa wherein Xaa = any amino acid, amino acids 5 and 6 together represent from 2 to 4 amino acids in length.

<220>

35

<221> VARIANT

<222> (21)..(23)

<223> Amino acid 21 is Xaa wherein Xaa = any amino acid, amino acids 21-23 together represent from 3 to 5 amino acids in length.

<220>  
 <221> VARIANT  
 <222> (13)..(13)  
 <223> Amino acid 13 is Xaa wherein Xaa = Z-1 wherein Z-1 = Arg or Lys,  
 5 Gln or Asn, Thr, Met, Leu or Ile, or Glu or Asp.

<220>  
 <221> VARIANT  
 <222> (15)..(15)  
 10 <223> Amino acid 15 is Xaa wherein Xaa = Z2 wherein Z2 = Ser or Arg,  
 Asn Gln, Thr, Val or Ala, or Asp or Glu.

<220>  
 <221> VARIANT  
 15 <222> (16)..(16)  
 <223> Amino acid 16 is Xaa wherein Xaa = Z3 wherein Z3 = His or Lys,  
 Asn or Gln, Ser, Ala, or Val, or Asp or Glu.

<220>  
 20 <221> VARIANT  
 <222> (19)..(19)  
 <223> Amino acid 19 is Xaa wherein Xaa = Z6 wherein Z6 = Arg or Lys,  
 Gln or Asn, Thr, Tyr, Leu, Ile or Met, or Glu or Asp.

25 <400>> 2

Xaa Xaa Xaa Cys Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
 1 5 10 15

30 Xaa Xaa Xaa His Xaa Xaa Xaa His Xaa Xaa Xaa Xaa  
 20 25

<210> 3  
 35 <211> 196  
 <212> PRT  
 <213> Artificial Sequence

<220>

<223> Zinc finger protein.

<400>> 3

5 Val Pro Ile Pro Gly Lys Lys Lys Gln His Ile Cys His Ile Gln Gly  
1 5 10 15  
Cys Gly Lys Val Tyr Gly Gln Ser Ser Asp Leu Gln Arg His Leu Arg  
20 25 30  
10 Trp His Thr Gly Glu Arg Pro Phe Met Cys Thr Trp Ser Tyr Cys Gly  
35 40 45  
Lys Arg Phe Thr Arg Ser Ser Asn Leu Gln Arg His Lys Arg Thr His  
15 50 55 60  
Thr Gly Glu Lys Lys Phe Ala Cys Pro Glu Cys Pro Lys Arg Phe Met  
65 70 75 80  
20 Arg Ser Asp Glu Leu Ser Arg His Ile Lys Thr His Gln Asn Lys Lys  
85 90 95  
Asp Gly Gly Gly Ser Gly Lys Lys Lys Gln His Ile Cys His Ile Gln  
100 105 110  
25 Gly Cys Gly Lys Val Tyr Gly Thr Thr Ser Asn Leu Arg Arg His Leu  
115 120 125  
Arg Trp His Thr Gly Glu Arg Pro Phe Met Cys Thr Trp Ser Tyr Cys  
30 130 135 140  
Gly Lys Arg Phe Thr Arg Ser Ser Asn Leu Gln Arg His Lys Arg Thr  
145 150 155 160  
35 His Thr Gly Glu Lys Lys Phe Ala Cys Pro Glu Cys Pro Lys Arg Phe  
165 170 175  
Met Arg Ser Asp His Leu Ser Arg His Ile Lys Thr His Gln Asn Lys  
180 185 190

Lys Gly Gly Ser  
195

5

<210> 4  
<211> 99  
<212> PRT  
<213> Artificial Sequence

10

<220>  
<223> Zinc finger protein.

<400> 4

15

Val Pro Ile Pro Gly Lys Lys Lys Gln His Ile Cys His Ile Gln Gly  
1 5 10 15

Cys Gly Lys Val Tyr Gly Thr Thr Ser Asn Leu Arg Arg His Leu Arg  
20 25 30

Trp His Thr Gly Glu Arg Pro Phe Met Cys Thr Trp Ser Tyr Cys Gly  
35 40 45

25

Lys Arg Phe Thr Arg Ser Ser Asn Leu Gln Arg His Lys Arg Thr His  
50 55 60

Thr Gly Glu Lys Lys Phe Ala Cys Pro Glu Cys Pro Lys Arg Phe Met  
65 70 75 80

Arg Ser Asp His Leu Ser Arg His Ile Lys Thr His Gln Asn Lys Lys  
85 90 95

35 Gly Gly Ser

<210> 5

<211> 99  
 <212> PRT  
 <213> Artificial Sequence

5 <220>  
 <223> Zinc finger protein.

<400> 5

10 Met Glu Lys Leu Arg Asn Gly Ser Gly Asp Pro Gly Lys Lys Lys Gln  
 1 5 10 15

His Ala Cys Pro Glu Cys Gly Lys Ser Phe Ser Gln Ser Ser Asn Leu  
 20 25 30

15 Gln Arg His Gln Arg Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Pro  
 35 40 45

20 Glu Cys Gly Lys Ser Phe Ser Arg Ser Ser His Leu Gln Gln His Gln  
 50 55 60

Arg Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Pro Glu Cys Gly Lys  
 65 70 75 80

25 Ser Phe Ser Arg Ser Asp His Leu Ser Arg His Gln Arg Thr His Gln  
 85 90 95

Asn Lys Lys

30

<210> 6

<211> 99

<212> PRT

35 <213> Artificial Sequence

<220>

<223> Zinc finger protein.

<400> 6

5 Met Glu Lys Leu Arg Asn Gly Ser Gly Asp Pro Gly Lys Lys Lys Gln  
1 5 10 15  
His Ala Cys Pro Glu Cys Gly Lys Ser Phe Ser Gln Ser Ser Asn Leu  
20 25 30  
10 Gln Arg His Gln Arg Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Pro  
35 40 45  
Glu Cys Gly Lys Ser Phe Ser Glu Ser Ser Asp Leu Gln Arg His Gln  
50 55 60  
15 Arg Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Pro Glu Cys Gly Lys  
65 70 75 80  
Ser Phe Ser Arg Ser Asp His Leu Ser Arg His Gln Arg Thr His Gln  
20 85 90 95  
Asn Lys Lys

<210> 7

<211> 99

<212> PRT

<213> Artificial Sequence

<220>

<223> Zinc finger protein.

<400> 7

35 Met Glu Lys Leu Arg Asn Gly Ser Gly Asp Pro Gly Lys Lys Lys Gln  
1 5 10 15  
His Ala Cys Pro Glu Cys Gly Lys Ser Phe Ser Gln Ser Ser Asn Leu







Asn Lys Lys

5

<210> 10

<211> 99

<212> PRT

<213> Artificial Sequence

10

<220>

<223> Zinc finger protein.

<400> 10

15

Met Glu Lys Leu Arg Asn Gly Ser Gly Asp Pro Gly Lys Lys Lys Gln  
1 5 10 15

His Ala Cys Pro Glu Cys Gly Lys Ser Phe Ser Gln Ser Ser Asn Leu  
20 25 30

Gln Arg His Gln Arg Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Pro  
35 40 45

25

Glu Cys Gly Lys Ser Phe Ser Gln Ser Ser Asp Leu Gln Arg His Gln  
50 55 60

Arg Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Pro Glu Cys Gly Lys  
65 70 75 80

30

Ser Phe Ser Arg Ser Asp His Leu Ser Arg His Gln Arg Thr His Gln  
85 90 95

Asn Lys Lys

35

<210> 11

<211> 229

<212> PRT

<213> Human

<400> 11

5 Met Arg Leu Ala Lys Pro Lys Ala Gly Ile Ser Arg Ser Ser Ser Gln  
1 5 10 15

Gly Lys Ala Tyr Glu Asn Lys Arg Lys Thr Gly Arg Gln Arg Glu Lys  
20 25 30

10 Trp Gly Met Thr Ile Arg Phe Asp Ser Ser Phe Ser Arg Leu Arg Arg  
35 40 45

Ser Leu Asp Asp Lys Pro Tyr Lys Cys Thr Glu Cys Glu Lys Ser Phe  
15 50 55 60

Ser Gln Ser Ser Thr Leu Phe Gln His Gln Lys Ile His Thr Gly Lys  
65 70 75 80

20 Lys Ser His Lys Cys Ala Asp Cys Gly Lys Ser Phe Phe Gln Ser Ser  
85 90 95

Asn Leu Ile Gln His Arg Arg Ile His Thr Gly Glu Lys Pro Tyr Lys  
25 100 105 110

Cys Asp Glu Cys Gly Glu Ser Phe Lys Gln Ser Ser Asn Leu Ile Gln  
115 120 125

30 His Gln Arg Ile His Thr Gly Glu Lys Pro Tyr Gln Cys Asp Glu Cys  
130 135 140

Gly Arg Cys Phe Ser Gln Ser Ser His Leu Ile Gln His Gln Arg Thr  
145 150 155 160

35 His Thr Gly Glu Lys Pro Tyr Gln Cys Ser Glu Cys Gly Lys Cys Phe  
165 170 175

Ser Gln Ser Ser His Leu Arg Gln His Met Lys Val His Lys Glu Glu

```

180
185
190

Lys Pro Arg Lys Thr Arg Gly Lys Asn Ile Arg Val Lys Thr His Leu
195 200 205

5
Pro Ser Trp Lys Ala Gly Thr Glu Gly Ser Leu Trp Leu Val Ser Val
210 215 220

Lys Tyr Arg Ala Phe
10 225

<210> 12
<211> 393
15 <212> PRT
<213> Mouse

<400> 12

20 Met Ser Glu Glu Pro Leu Glu Asn Ala Glu Lys Asn Pro Gly Ser Glu
1 5 10 15

Glu Ala Phe Glu Ser Gly Asp Gln Ala Glu Arg Pro Trp Gly Asp Leu
20 25 30

25 Thr Ala Glu Glu Trp Val Ser Tyr Pro Leu Gln Gln Val Thr Asp Leu
35 40 45

Leu Val His Lys Glu Ala His Ala Gly Ile Arg Tyr His Ile Cys Ser
30 50 55 60

Gln Cys Gly Lys Ala Phe Ser Gln Ile Ser Asp Leu Asn Arg His Gln
65 70 75 80

35 Lys Thr His Thr Gly Asp Arg Pro Tyr Lys Cys Tyr Glu Cys Gly Lys
85 90 95

Gly Phe Ser Arg Ser Ser His Leu Ile Gln His Gln Arg Thr His Thr
100 105 110

```

	Gly	Glu	Arg	Pro	Tyr	Asp	Cys	Asn	Glu	Cys	Gly	Lys	Ser	Phe	Gly	Arg	
				115					120					125			
5	Ser	Ser	His	Leu	Ile	Gln	His	Gln	Thr	Ile	His	Thr	Gly	Glu	Lys	Pro	
		130					135					140					
	His	Lys	Cys	Thr	Glu	Cys	Ala	Lys	Ala	Ser	Ala	Ala	Ser	Pro	His	Leu	
	145					150					155					160	
10	Ile	Gln	His	Gln	Arg	Thr	His	Ser	Gly	Glu	Lys	Pro	Tyr	Glu	Cys	Glu	
					165					170					175		
	Glu	Cys	Gly	Lys	Ser	Phe	Ser	Arg	Ser	Ser	His	Leu	Ala	Gln	His	Gln	
15				180					185					190			
	Arg	Thr	His	Thr	Gly	Glu	Lys	Pro	Tyr	Glu	Cys	His	Glu	Cys	Gly	Arg	
		195						200					205				
20	Gly	Phe	Ser	Glu	Arg	Ser	Asp	Leu	Ile	Lys	His	Tyr	Arg	Val	His	Thr	
		210					215					220					
	Gly	Glu	Arg	Pro	Tyr	Lys	Cys	Asp	Glu	Cys	Gly	Lys	Asn	Phe	Ser	Gln	
	225					230					235					240	
25	Asn	Ser	Asp	Leu	Val	Arg	His	Arg	Arg	Ala	His	Thr	Gly	Glu	Lys	Pro	
					245					250					255		
	Tyr	His	Cys	Asn	Glu	Cys	Gly	Glu	Asn	Phe	Ser	Arg	Ile	Ser	His	Leu	
30				260					265					270			
	Val	Gln	His	Gln	Arg	Thr	His	Thr	Gly	Glu	Lys	Pro	Tyr	Glu	Cys	Thr	
			275					280					285				
35	Ala	Cys	Gly	Lys	Ser	Phe	Ser	Arg	Ser	Ser	His	Leu	Ile	Thr	His	Gln	
		290					295					300					
	Lys	Ile	His	Thr	Gly	Glu	Lys	Pro	Tyr	Glu	Cys	Asn	Glu	Cys	Trp	Arg	
	305					310					315					320	



<221> VARIANT

<222> (16)..(16)

<223> Amino acid 16 is Xaa wherein Xaa = Z3 wherein Z3 = His or Lys,  
Asn or Gln, Ser, Ala, or Val, or Asp or Glu.

5

<220>

<221> VARIANT

<222> (19)..(19)

<223> Amino acid 19 is Xaa wherein Xaa = Z6 wherein Z6 = Arg or Lys,  
Gln or Asn, Thr, Tyr, Leu, Ile or Met, or Glu or Asp.

10

<400> 13

Pro Tyr Lys Cys Pro Glu Cys Gly Lys Ser Phe Ser Xaa Ser Xaa Xaa  
1 5 10 15

15

Leu Gln Xaa His Gln Arg Thr His Thr Gly Glu Lys  
20 25

20

<210> 14

<211> 10

<212> DNA

<213> Tomato golden mosaic virus

25

<400> 14

agtaaggtag

10

30

<210> 15

<211> 28

<212> PRT

<213> Artificial Sequence

35

<220>

<223> Zinc finger domain.

<400> 15





<210> 18  
 <211> 11  
 <212> PRT  
 5 <213> Human immunodeficiency virus

<400> 18

Tyr Gly Arg Lys Lys Arg Arg Gln Arg Arg Arg  
 10 1 5 10

10  
 15  
 20  
 25  
 30  
 35

<210> 19  
 <211> 30  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Acid dimerization peptide.

<400> 19

Ala Gln Leu Glu Lys Glu Leu Gln Ala Leu Glu Lys Glu Asn Ala Gln  
 1 5 10 15

Leu Glu Trp Glu Leu Gln Ala Leu Glu Lys Glu Leu Ala Gln  
 20 25 30

<210> 20  
 <211> 30  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Basic dimerization peptide.

<400> 20

Ala Gln Leu Lys Lys Lys Leu Gln Ala Leu Lys Lys Lys Asn Ala Gln

	1	5	10	15												
	Leu	Lys	Trp	Lys	Leu	Gln	Ala	Leu	Lys	Lys	Lys	Leu	Ala	Gln		
		20		25		30										
5																
	<210>	21														
	<211>	20														
	<212>	PRT														
10	<213>	Artificial Sequence														
	<220>															
	<223>	Flexible linker.														
15	<400>	21														
	Gly	Gly	Gly	Gly	Ser	Gly	Gly	Gly	Gly	Ser	Gly	Gly	Gly	Gly	Ser	Gly
	1			5				10					15			
20	Gly	Gly	Gly	Ser												
				20												
25	<210>	22														
	<211>	9														
	<212>	DNA														
	<213>	Artificial Sequence														
30	<220>															
	<223>	Flexible linker.														
	<400>	22														
	gcagaagcc															
35																
	<210>	23														
	<211>	5														
	<212>	PRT														



**SECRET**

**SECRET**

**SECRET**

[illegible]

**SECRET**

**SECRET**

[illegible]

**SECRET**

**SECRET**

**D E T I L**

**SECRET**

**SECRET**

**SECRET**

**SECRET**

**SECRET**

[illegible][illegible]

**SECRET**

**SECRET**

**SECRET**

**SECRET**

**SECRET**

**SECRET**

**SECRET**

[illegible][illegible][illegible]

**SECRET**

[illegible]

**SECRET**





<213> Artificial Sequence  
  
 <220>  
 5 <223> Zinc finger domain target sequence.  
  
 <220>  
 <221> misc\_feature  
 <222> (15)..(17)  
 10 <223> Nucleotides 15-17 are "n" wherein "n" = g, a, t, or c.  
  
 <400> 33  
 tatatatagg ggaannnata tatata 26  
  
 15 <210> 34  
 <211> 26  
 <212> DNA  
 <213> Artificial Sequence  
 20 <220>  
 <223> Zinc finger domain target sequence.  
  
 <220>  
 25 <221> misc\_feature  
 <222> (15)..(17)  
 <223> Nucleotides 15-17 are "n" wherein "n" = g, a, t, or c.  
  
 <400> 34  
 30 tatatatagg ggaannntta tatata 26  
  
 <210> 35  
 <211> 26  
 35 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Zinc finger domain target sequence.





<223> Nucleotides 37-39 and 46-51 are "n" wherein "n" = g, a, t, or c.

<400> 37

tttgatatggt ttttcaccgg tatgggtacg ctgatgnnnc tgcaannnnn ngctnnngct 60

5

<210> 38

<211> 60

<212> DNA

10

<213> Artificial Sequence

<220>

<223> Partial zinc finger domain oligomer.

15

<220>

<221> misc\_feature

<222> (46)..(57)

<223> Nucleotides 46-48 and 52-57 are "n" wherein "n" = g, a, t, or c.

20

<400> 38

ggtgaaaaac catacaaagt tccagagtgc ggcaaattct tctctnnntc tnnnnnnctt 60

<210> 39

25

<211> 60

<212> DNA

<213> Artificial Sequence

<220>

30

<223> Partial zinc finger domain oligomer.

<220>

<221> misc\_feature

<222> (37)..(51)

35

<223> Nucleotides 37-39 and 46-51 are "n" wherein "n" = g, a, t, or c.

<400> 39

cttgtaaggc ttctcgccag tgtgagtacg ctgatgnnnc tgaagnnnnn nagannnaga 60

0011072304  
0027072304

5     <210> 40  
       <211> 56  
       <212> DNA  
       <213> Artificial Sequence  
  
 10    <220>  
       <223> Partial zinc finger domain oligomer.  
  
 15    <220>  
       <221> misc\_feature  
       <222> (48)..(58)  
       <223> Nucleotides 48-50 and 54-58 are "n" wherein "n" = g, a, t, or c.  
  
 20    <400> 40  
       ggcgagaagc cttacaagtg ccctgaatgc gggaagagct ttagtnnnag tnnnnn 56  
  
 25    <210> 41  
       <211> 55  
       <212> DNA  
       <213> Artificial Sequence  
  
 30    <220>  
       <223> Partial zinc finger domain oligomer.  
  
       <220>  
       <221> misc\_feature  
       <222> (28)..(48)  
       <223> Nucleotides 28-30, 37-42 and 46-48 are "n" wherein "n" = g, a, t,  
             or c  
  
 35    <400> 41  
       cttctccccc gtgtgcgtgc gttggtgnnn ttgtaannnn nnactnnnac taaag 55  
  
       <210> 42  
       <211> 45



[illegible]

5

<213> Artificial Sequence

15

20

25

30

35

-123-

0004126107204

	<210>	49	
5	<211>	56	
	<212>	DNA	
	<213>	Artificial Sequence	
	<220>		
10	<223>	Partial zinc finger domain oligomer.	
	<400>	49	
		ggcgagaagc cttacaagtg ccctgaatgc gggaagagct ttagtcgtag tgatag	56
15	<210>	50	
	<211>	55	
	<212>	DNA	
	<213>	Artificial Sequence	
20	<220>		
	<223>	Partial zinc finger domain oligomer.	
	<400>	50	
25		cttctccccc gtgtgcgtgc gttggtgggt ttgtaagcta tcactacgac taaag	55
	<210>	51	
	<211>	16	
30	<212>	DNA	
	<213>	Arabidopsis	
	<400>	51	
		atagtttacg tggcat	16
35	<210>	52	
	<211>	10	
	<212>	DNA	

10

<210>	53
<211>	10
<212>	DNA

<213> Arabidopsis

10

<210>	54
<211>	45
<212>	DNA

<213> Artificial Sequence PCR Primer

45

<210>	55
<211>	44
<212>	DNA
<213>	Artificial Sequence

<220>  
<223> PCR primer.

44

<210>	56
<211>	45
<212>	DNA

<213> Artificial Sequence

<220>

<223> PCR primer.

5

<400> 56

tgcgcccggt tctctcggt tctccccgt gtgcgtgcgt tgggtg

45

10

<210> 57

<211> 19

<212> DNA

<213> Artificial Sequence

15

<220>

<223> ZFP target sequence.

<400> 57

ttgggtgctt tgggtgctc

19

20

<210> 58

<211> 10

<212> DNA

25

<213> Artificial Sequence

<220>

<223> ZFP target sequence.

30

<400> 58

ttgggtgctt

10

35

<210> 59

<211> 10

<212> DNA

<213> Artificial Sequence

Sequence

See  
a1  
cont

<220>

<223> ZFP target sequence.

<400> 59

5 ttgggtgctc

10

<210> 60

<211> 35

10 <212> DNA

<213> Artificial Sequence

<220>

<223> ZFP target probe.

15

<400> 60

tatatatatt ggtgctttg ggtgctctat atata

35

20

<210> 61

<211> 10

<212> DNA

<213> Artificial Sequence

25

<220>

<223> ZFP target sequence.

<400> 61

agtaaggtag

10

30

<210> 62

<211> 10

<212> DNA

35

<213> Artificial Sequence

<220>

<223> ZFP target sequence.



<400> 62  
ttgggtgctc

10

5 <210> 63  
<211> 10

<212> DNA

<213> Artificial Sequence

10

<220>

<223> ZFP target sequence.

15 <400> 63  
tacgtggcat

10

<210> 64

<211> 10

20 <212> DNA

<213> Artificial Sequence

<220>

<223> ZFP target sequence.

25 <400> 64  
ggagatgata

10

30 <210> 65

<211> 19

<212> DNA

<213> Artificial Sequence

35 <220>

<223> ZFP target sequence.

<400> 65

ttgggtgctt tgggtgctc

19

5 <210> 66  
<211> 19  
<212> DNA  
<213> Artificial Sequence

10 <220>  
<223> ZFP target sequence.

<400> 66  
agtaaggtag gagatgata

19

15 <210> 67  
<211> 19  
<212> DNA  
<213> Artificial Sequence

20 <220>  
<223> ZFP target sequence.

<400> 67  
tacgtggcat tgggtgctc

19

25  
30 <210> 68  
<211> 28  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Zinc finger domain.

35 <220>  
<221> VARIANT  
<222> (13)..(13)  
<223> Amino acid 13 is "Xaa" wherein "Xaa" = Z1 wherein Z1 = Arg, Gln,  
Thr, Met or Glu

5  
 <220>  
 <221> VARIANT  
 <222> (15)..(15)  
 <223> Amino acid 15 is "Xaa" wherein "Xaa" = Z2 wherein Z2 = Ser, Asn,  
 Thr, or Asp

10  
 <220>  
 <221> VARIANT  
 <222> (16)..(16)  
 <223> Amino acid 16 is "Xaa" wherein "Xaa" = Z3 wherein Z3 = His, Asn,  
 Ser, or Asp

15  
 <220>  
 <221> VARIANT  
 <222> (19)..(19)  
 <223> Amino acid 19 is "Xaa" wherein "Xaa" = Z6 wherein Z6 = Arg, Gln,  
 Thr, Tyr, Leu, or Glu

20  
 <400> 68  
 Gln His Ala Cys Pro Glu Cys Gly Lys Ser Phe Ser Xaa Ser Xaa Xaa  
 1 5 10 15

25  
 Leu Gln Xaa His Gln Arg Thr His Thr Gly Glu Lys  
 20 25

30  
 <210> 69  
 <211> 28  
 <212> PRT  
 <213> Artificial Sequence

35  
 <220>  
 <223> Zinc finger domain.

<220>  
 <221> VARIANT  
 <222> (13)..(13)

<223> Amino acid 13 is "Xaa" wherein "Xaa" = Z1 wherein Z1 = Arg, Gln, Thr, Met, or Glu

<220>

5 <221> VARIANT

<222> (15)..(15)

<223> Amino acid 15 is "Xaa" wherein "Xaa" = Z2 wherein Z2 = Ser, Asn, Thr, or Asp.

10 <220>

<221> VARIANT

<222> (16)..(16)

<223> Amino acid 16 is "Xaa" wherein "Xaa" = Z3 wherein Z3 = His, Asn, Ser, or Asp

15 <220>

<221> VARIANT

<222> (19)..(19)

<223> Amino acid 19 is "Xaa" wherein "Xaa" = Z6 wherein Z6 = Arg, Gln, Thr, Tyr, Leu, or Glu.

20 <400> 69

25 Pro Tyr Lys Cys Pro Glu Cys Gly Lys Ser Phe Ser Xaa Ser Xaa Xaa  
1 5 10 15

Leu Ser Xaa His Gln Arg Thr His Thr Gly Glu Lys  
20 25

30